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SMC for Depletion of Interconnected Surface Water

Monday, March 22, 2021

Meeting Notes

Contact: Sam Magill, Practitioner Work Group Facilitator

Agenda Review and Work Group Introductions

Sam Magill, Work Group Facilitator welcomed the group, listed participants on the call, then walked through the meeting agenda.

Review GSP Schedule

Marcus Trotta thanked the group for their participation then presented the draft (Santa Rosa Plain example) schedule for the GSP, noting it will be a very busy, next few months. The aim is to have the entire Groundwater Sustainability Plan out for public review by the end of the summer. Trotta noted this is the group's last ISW meeting. The focus today is:

- to review draft Minimum Thresholds and Measurable Objectives
- workgroup input on options for GSA Board consideration for Undesirable Results
- to discuss approach for translating to Sonoma and Petaluma Valley
- final list of data gaps and recommendations/prioritization for future activities to further develop SMC.

Trotta showed upcoming Advisory Committee and Board meetings and invited the attendees to attend, help with questions, and share thoughts about staff's recommended approach for this SMC.

Jay Jasperse mentioned his appreciation for this group's help and hopes for their participation in the upcoming Advisory Committee meetings.

Adaptive Management – Plans and Steps to Improve SMC

Marcus Trotta highlighted the challenges in determining Interconnected Surface Water SMC:

- At majority of potential Representative Monitoring Points, we only have one year's worth of groundwater level data.
- There are variable levels of correlation between simulated streamflow depletion and groundwater levels.
- Potential instream flow targets are not available.
- There is limited data and information for assessing presence of any historical, significant, and unreasonable conditions.

Marcus Trotta said he would like to get the group's help in prioritizing and identifying funding sources for this work; he listed existing prioritization criteria and funding sources.

The group was asked for their input on the following questions.

1. Are there other studies/investigations that you would recommend be considered (new or existing)?
2. Any ideas on funding sources or partnership opportunities?
3. Do you have input on initial grouping for prioritization/sequencing?

Questions/Comments

Andrew Renshaw – I think the initial grouping is right on point. You have thought through the technical bits needed at this planning stage and into the future. It looks like a robust strategy. Thank you for including DWR's airborne geophysical surveys into your potential toolkit. New datasets will be available soon so we look forward to seeing how local agencies can leverage the information to improve their plans.

> Sam Magill – Do you have an idea when the geophysical airborne surveys will start rolling out?
> Renshaw – It is still in the contracting stage, there are lots of variables involved; one big one being acquiring helicopters. We are hoping that some surveys will start this summer.

Sam Boland-Brien – Is there some methodology for how to tie the airborne geophysical data to depletions?

> Trotta – The data gap that it would help fill would be the properties of the shallow aquifer near each RMP and would depend on the resolution of the surveys. It could help inform the degree of connection between surface water and groundwater; I am not yet sure about the spatial scale and exactly how useful it will be.

Maurice Hall – There are a lot of good ideas. I recognize you might not be able to do everything you would like to do across the whole area. To what degree have you considered prioritizing where you invest early to maximize your learning or help address investments and guide future learning?

> Trotta – In terms of prioritizing, the highest priority is to better understand causes and effects. Getting better data on existing wells and stream diversions is one item I'd prioritize. We can use our existing information on Groundwater Dependent Ecosystems. Also, improving our understanding on potential habitat would be something to prioritize and would help inform about most vulnerable areas.
> Hall – I would love to have all the information everywhere. Practically speaking, you aren't going to have an unlimited budget. We are in uncharted territory, so my urging is to take care of places where we know there are issues.

Rick Rogers – I have heard that DWR is updating Bulletin 118. Are there any analyses or studies they will undertake as part of the update process to answer some questions the GSAs might have?

> Renshaw – Bulletin 118, now called 'California Groundwater', will be rolled out soon. It will go from a stand-alone document to an interactive website with maps and live data. I am not sure about the exact timeline. The Governor's office has just approved the release of the information.

Rogers – In general, I think these basins are going in the right direction and are at the forefront of trying to answer these questions. I wish I could say it for other basins. You are one of the basins moving forward in an appropriate way, good job!

Jessie Maxfield – I agree with Rick Rogers' comment.

Rogers – This isn't really a potential funding source for GSP development, but I have had a few discussions with California Department of Fish and Wildlife (CDFW) about using the Fisheries Restoration Grant Program to potentially open projects that have a dual purpose – increase groundwater recharge and ecological benefits for aquatic habitat.

Maxfield – I will reach out to my previous supervisor, who is now the program manager of the Habitat Grant Restoration Program and can talk to the Fisheries group as well.

Hall – On funding sources and partnership opportunities, one of the things I hope would evolve is cooperation between surface water rights users and groundwater managers.

> Trotta – That is something we are building into some of our SMCs (e.g., Water Quality) – a plan for routine coordination with other stakeholders such as regulatory agencies, I would envision something similar for this SMC.

Rogers – I am curious if the GSAs have considered any partnerships with local academia - with grad students to help with GSP development and implementation. Have you looked into anything like that?

> Trotta – Nothing specific at this point, it is certainly something that would be beneficial. Sonoma Water does a lot of collaboration with researchers. The GSA would be open to that.
> Jasperse – I think it is a good idea. We have a lot of partnerships with academia and research (Federal and State) agencies. We should look for those opportunities with the Groundwater Sustainability Agencies.

Hall – That question and Rick Rogers' earlier comment about working to do things right, I wonder if a group of GSAs and partners could put together a proposal for some funding from National Science Foundation. We are dealing with an issue that needs enlightenment. It isn't unreasonable to think about what Federal and bigger funding sources could tap if we collaborate across boundaries.

> Jasperse – Some of us on this call are on the Association of California Water Agencies (ACWA) groundwater subcommittee for SGMA implementation; it might be a good arena to look at the idea of everyone working together, and possible Federal or State funding.

Maxfield – How about including specific investigation about cannabis impacts in the area? Are there resources available for monitoring that land use, in particular? There is a land use ordinance happening now and I possibly could share the letter/comments.

> Trotta – It is something that has come up in the Advisory Committee meetings and we have committed to tracking cannabis cultivation and water use in all three basins. Currently, in permitted cannabis, there isn't a lot that has been developed within the basins to date. It is not included in the current water budget but certainly, something we will be tracking in the implementation. We would appreciate to see the letter.
> Maxfield – I will check to see if it can be distributed and get back to you.

Preliminary Minimum Thresholds/Measurable Objectives Methodology and Approach

Marcus Trotta introduced the topic. Stephen Maples walked the group through the example methodology and approach for Santa Rosa Plain. The methodology will be transferred to Petaluma and Sonoma Valleys as a next step. Following Stephen Maples' presentation, he asked for the group's input on the proposed methodology and approach.

Questions/Comments

Hall – I am struggling with your first assumption of how you selected the years where the depletion was the largest. You used a ratio of the depletion to streamflow. Does that cause you to choose the right years?

Maples – We wanted to look at the surface water depletion throughout the basin to see what years we had most surface water depletion. We determined that 2014, 2015, and 2016 were the years we had the most. As a starting point, looking at the mean value of surface water depletion in that period, we set that as our minimum threshold value.

Hall – Part of my concern is there are other factors besides depletion that could affect total flow. Unless you are checking this against other data, you could be selecting years where the most surface water depletion is occurring.

Maples – The way we isolate the impact of surface water depletion by pumping is running the model twice. By looking at the difference of streamflow in the two simulations, you can isolate the effect of the pumping alone. By subtracting one from the other, you can see the percentage difference between the baseline and non-baseline scenario. We can look at all the aggregate data and isolate the effects of pumping.

Hall – Yes, I forgot you were basing everything solely on data in the model.

Boland – Could you give me an idea of the relative magnitude of variation in those years – average streamflow?

Maples – We see a very large variation in streamflow. It drops below CFS during the summer months and you see high flows in the winter. By differencing the two values we come up with the percentage difference.

Boland – So the graph is showing that with wet years when there are high flows, there is still a lot of depletion?

Maples – Each of the points is for July-September. The difference between 45% decrease and 70% decrease is probably due to reduced recharge. The decrease in 2014, 2015, and 2016 is the reflection of lower groundwater levels in the system.

Rogers – It appears the thresholds are based on drought condition minimums and not on avoiding significant and undesirable impacts due to beneficial uses of surface water. Is there an attempt to do that in future?

Maples – We are presenting this as our first step; this methodology could be transferable as soon as better information becomes available.

Trotta – Some of the data collection is focused on trying to answer the question of potential impacts to beneficial users. Looking at historical estimates of when surface water depletions were greatest, and basing our Minimum Thresholds on that, is where we are now.

Rogers – Why are you focusing estimates on when surface flow depletions are greatest? When they were greatest, they were probably unsustainable.

Trotta – The preliminary MTs are based on those years and represent levels that serve as an indicator of Undesirable Results. Undesirable Results are a quantitative combination of Minimum Thresholds. For the Measurable Objective, we are basing it more on historical record rather than the 2014-2016 years.

Lisa Porta – Make sure not to confuse significant and unreasonable conditions with Undesirable Results. We will look at Undesirable Results shortly when reviewing the Minimum Threshold combinations.

Georgina King – Often when we are looking at Minimum Thresholds, we look at climate change and the possibility that it could go lower than this in future. With more data in the next five years, it will change; this is a start.

Options for Undesirable Results

An Undesirable Result is a quantitative description of the combination of Minimum Threshold exceedances that cause significant and unreasonable effects in the Basin/Subbasin. Marcus Trotta presented three options for the Board to consider for determining Undesirable Results; he said he was looking for input from the group on the options.

1. 25% of RMPs basin-wide (2 wells).
2. 25% of RMPs (2 wells) for 2 consecutive years
3. 25% during drought years and 10% during non-drought years

Sam Magill asked the group for their thoughts/preference/ideas for Undesirable Results options, and thoughts on conditions for determining Undesirable Results.

Questions/Comments

Boland-Brien – Some folks get hung up on the term 'jurisdiction of the Water Board", maybe it could use some wordsmithing. I think, this captures what we are talking about.

Rogers – I don't see how it is tied to the Undesirable Results which is the effect of significant and unreasonable depletion on surface water beneficial uses. It seems like it is based on 2014-2016 which is likely the biggest streamflow depletion. On the face of it, I would guess it was the worst time for beneficial uses of surface water because it was the height of the drought. Am I missing something?

> Maples – We see the greatest degree of depletion during the mentioned three years. The proportion that is removed from the surface water to groundwater by groundwater pumping totally dominates the amount of streamflow in the stream. Here, we see that groundwater level is a good proxy for those years. The methodology is adaptive; if in the future, with better information we determine a minimum streamflow value we want to adhere to, we can use it to adjust what the corresponding groundwater level would be with the updated information.
> Rogers – That does clarify it a bit. It seems like the threshold is setting a depletion threshold consistent with highest depletion we have seen in the past. I would recommend in the absence of data, to use something a bit more conservative. CDFW's 'Best Management Practices' manual for SGMA, recommends using a more conservative approach in the absence of data. I have concern about establishing this threshold that is consistent with streamflow depletion occurring in the later years of our recent California drought.
> Jasperse – How would you account for the natural occurring hydrologic variability?
> Rogers – I think there is a level where you would be avoiding significant and unreasonable impacts to surface water body. I understand it isn't up to the GSA to correct the issue of insufficient flow in a creek. The groundwater extractors have an impact and surface flow diverters have an impact. The GSA only needs to correct the impact they are having. By dealing with the groundwater pumping impact through SGMA, and the streamflow depletion through surface water diverters it is going to be an issue in spring/early summer. The most critical period for salmon and steelhead habitat is middle to late summer when we are dealing with lower baseflows. What are we trying to solve with the inner year variability?
> Jasperse – I am looking at two things we have to separate – naturally occurring hydrogeologic variability, and 'coloring' the depletion. For the climate impacts, how do we account for those without a methodology like what Stephen Maples incorporates in the model?

Boland-Brien – Regarding how Undesirable Results are framed, where it is set right now, is at groundwater level and that ties to a percentage decrease in streamflow. It would be helpful to get a

sense of the flows to tie it to Rick Rogers' question in the long term. Undesirable Results have two Minimum Threshold exceedances, is there some way to account for severity of an exceedance?

Maples – We have looked at this from cubic feet per second (CFS) volumes, but we present it as percentages. We can provide the numbers in CFS values if that helps when moving forward.

Rogers – Choosing a threshold that represents what was likely the most unsuitable conditions, is my main heartburn. It is hard to weigh in on this being an adaptive process when it is unclear how it will be refined in the future. If it can be fleshed out and included in the Plan, as a game plan for ultimately setting better thresholds in the future when we have better information, it would help me feel better.

Next steps

Sam Magill mentioned that the presentation with an email will be sent after the meeting with instructions on how to provide further input.

Marcus Trotta thanked everyone for their time. The upcoming Santa Rosa Plain Advisory Committee meeting is on Monday, March 29. We are planning to bring this SMC to them for input and recommendations. Any additional input should be sent to Marcus Trotta this week.

Rogers – Will the content of the presentations be formally written up so we can provide further comment?

Trotta – Certainly, as we write it up, we will provide it to you for review/comment. The May timeframe is what we are looking at for this SMC.

Sam Magill said if any workgroup members are available on Monday for the Santa Rosa Plain Advisory Committee meeting at 3pm, (SMC discussion item around 4pm), we would appreciate if you would join to answer Advisory Committee questions from your perspective.

Jay Jasperse thanked everyone again for their help.

Attendees

Jessie Maxfield, CA Department of Fish and Wildlife
Val Zimmer, State Water Resources Control Board
Sam Boland-Brien, State Water Resources Control Board
Maurice Hall, Environmental Defense Fund
Rick Rogers, National Marine Fisheries Service
Andrew Renshaw, Dept. of Water Resources

Jay Jasperse, Sonoma Water
Marcus Trotta, Sonoma Water
Andy Rich, Sonoma Water
Mitch Buttress, Sonoma Water
Stephen Maples, Sonoma Water
David Manning, Sonoma Water
Lisa Porta, Montgomery & Associates
Georgina King, Montgomery & Associates
Sam Magill, Work Group Facilitator
Simone Peters, Sonoma Water (recording meeting notes)